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THE JOURNAL OF SCHOOL HEALTH

Devoted to the interests and advancement of school health service and instruction. Your participation by membership is solicited.

Vol. XVIII MAY, 1948 No. 5

HEAD ON!

DOCTORS HARRY E. MOCK, HARRY E. MOCK, JR., AND CHARLES J. MOCK*

For more than 25 years, the senior author has made a hobby of the problem of skull fractures and brain injuries, their prevention and how their mortality rate can be reduced.

While the death rate from football injuries is considerably lower than that from hunting, swimming, motoring, and similar pastimes, yet a sufficient number of youths are killed annually in football to warrant our interest and action.

From 1931 through 1946, records of 430 deaths, 283 directly and 147 indirectly, caused by football injuries were collected.

Of these fatal injuries, 45.7 per cent were due to skull fractures or brain injuries. Judging all injuries by their mortality rates, those to the head are predominantly the most serious.**

From our studies of more than 8,000 cases, we have learned many lessons, indicating how the high mortality rate from these injuries can be reduced.

What Causes Head Injuries in Football?—In order to answer this question, we sought information from football players, coaches, manufacturers of athletic equipment and from Dr. Charles E. Shannon, for years surgeon to the University of Chicago football team.

Football players seemed to consider the base of the skull and the back of the neck as the most vulnerable spot, always inadequately protected. Some players considered that the present day stiff plastic helmet was largely responsible for injury in this vulnerable spot, stating that the helmet frequently is forcibly shoved back against the base of the skull and the neck during a tough play.

Equipment manufacturers have sought to develop a helmet that would truly protect the players from head injuries, and we have studied literally dozens of helmets, all testifying to the manufacturers' efforts to solve the problem. In addition, we have studied many other types of protective apparatus made for the protection

*The Doctors Mock, father and two sons, are surgeons in Chicago, Ill.

**Hospital Discharge Study, Deardoff & Fraenkel. Welfare Council of New York, 1943.

of the chest, spleen and kidneys, and the bony parts, such as the shoulders, hips and thighs. During the last 25 years there has been an evolution in equipment from the soft cumbersome padded materials to plastic or other hard nonyielding material sometimes padded and sometimes held in place only by canvas. As we studied the present day equipment, we were impressed with the fact that much of it *served better for purposes of offense than for purposes of protection.*

Imagine a 200-pound powerful player, covered from head to foot with a hard outer shell, padded on the inside for his protection. His head, with this hard shell, represents a human cannon ball charging into the line. It does not take much stretch of the imagination to understand why the majority of skull fracture-brain injuries occur to defensive players. The manufacturers recognize this danger and agree that much of the equipment is better for *offense* than for *protection* but state that such equipment is demanded and has become a recognized part of the game.

Dr. Shannon points out that no football team should be without a doctor, present at practice periods as well as at all games. Frequent physical examinations and early treatment of injuries are essential. When a player is knocked unconscious, only the immediate attention of a trained physician can prevent the inherent dangers of such an injury.

For example, a player at a recent pro-game was knocked out on the field. The coach and two players half carried, half dragged him to the sideline. He lay on a blanket while a trainer worked over him. At a crucial point in the game this player was sent back into the game. It was evident that he was groggy and he was shortly removed. The minutes he returned to the game could very well have been the lucid period between the primary and the secondary unconsciousness of an extradural hemorrhage. Only a trained physician could have recognized this condition and met the potential danger, but none was present.

Coach Clark D. Shaughnessy, with his 40 years of experience, has given us the most enlightening facts concerning the possible etiological factors in head injuries in football players. The fact that Mr. Shaughnessy received the National Safety Council citation in 1943 for his work in prevention of accidents among football players gives weight to his statement, which we quote verbatim:

"Situations on Football Practice and Playfields in Which Most Head Injuries Occur,— 1. *Head-on Tackling*: Some coaches teach this form of tackling as the most effective way of bringing the ball

carrier to a 'sudden' stop, or at least with a minimum of gain. The tackler is taught to aim his head at a point between the pit of the ball carrier's stomach and a little above his knees. It is granted that this is an effective tackle from the standpoint of stopping the ball carrier, but it is dangerous in that two men running at each other, the ball carrier especially at full speed, develop a tremendous momentum. If the ball carrier's knee happens to come in contact with the tackler's head (and the ball carrier to protect himself has the right to bring up his knee to ward off the tackle), there is considerable danger of injury unless a headguard is worn that is capable of almost supernatural protection. *This form of tackling should be eliminated.*

"2. Frequently when a ball carrier is almost stopped by one tackler who has hold of only one leg, and the ball carrier is still twisting and trying to pull himself loose and is standing rather high, a second tackler running at full speed will hit him from in front with a shoulder or head-on tackle around 'midships' or higher with such force that the ball carrier's head literally will bounce on the ground. If at that particular point the field happens to be hard, or the back of the ball carrier's head comes in contact with something hard and unyielding, such as a stone or improperly covered drain, injury is likely to develop unless the ball carrier is wearing a well fitted, adequately protective headguard.

"3. During scrimmages, occasionally a player's head, not necessarily the ball carrier's or tackler's head, will come in contact with the heel of the shoe of some player who has swung his leg around backward with terrific force (usually accidentally but occasionally intentionally).

"4. Where permission is granted players to indulge in games or scrimmages or any contact work *without headguards*, then there is always danger from blows to the head. *This should never occur.* Players should be forced to 'get used' to the headguards. A player with the confidence of having a 'good' headguard on his head can play better football than if he does not wear such equipment.

"Headguards,—1. Headguards should be comfortable. If not, players will discard them entirely or loosen up the straps that hold them in place to ease the discomfort, and then the headguards will slip out of place when subjected to blows.

"2. Headguards should *fit* tightly and not slip sideways, frontwards or backwards when subjected to blows of any kind.

"3. Inasmuch as the sizes and shapes of heads vary considerably, a headguard that can be adjusted to conform somewhat to var-

iations in the shapes of the head, and also somewhat to slight variations in sizes, is desirable.

"4. At *no* point should the head ever come in contact with the wall of the headguard. Any blow at any point on the outside of the headguard should be distributed over its entire extent. Material should be used that will withstand any possible blow without denting.

"5. Old headguards that no longer protect adequately should never be used.

"6. Players should be *taught* to adjust and to keep properly fitted *their* own headguards.

"Medical Supervision of Football,—No scrimmage or game should ever be held by a high school, college, or university, or any other organization, without a doctor in attendance. The doctor's decisions about the physical condition and the fitness of players to participate should be absolutely final.

"No boy should ever be allowed to play football until he has been thoroughly examined physically and approved for participation by a competent physician."

Mr. Shaughnessy's statements concerning head-on tackling and other dangerous procedures during play have received, but still warrant, the closest attention of the Rules committee controlling the game of football.

Mr. Shaughnessy and other coaches have designed numerous helmets aimed at meeting the qualifications quoted above concerning headguards. Approximately 30 of these modern headguards which were made by various manufacturers were studied. The chief protective principle, common to all these guards, is the hard exterior shell. On the interior of this shell, one finds various types of material—canvas, rubber, etc.—attached to the shell and made to conform to the contours of the head in an effort to hold it snugly in place. The chief aim has been to make the headguard comfortable but not cumbersome.

Much of this material is so thin that a hard blow to the shell must result in bringing it in direct contact with the scalp and underlying skull. Instead of dispersing the force waves throughout the shell, this contact transmits force waves directly against the skull. Such a helmet may protect the skull against a direct fracture, but it does not protect the underlying brain from a direct injury or *contrecoup* injury opposite the point of contact.

In some helmets even a light blow to the shell seems to give an impact of force to the base of the skull and the neck. It is con-

ceivable that a severe blow to these helmet shells could result in a *brain concussion,* a severe shaking up of the brain, a *commotio cerebri,* without any sign of injury to the head.

Unfortunately, the meager statistics thus far gathered do not give detailed autopsy findings concerning the location of the injury to the brain or the nature and site of the hemorrhage so often reported as cerebral. Is the latter extradural, subdural, or does the force to the vault cause a *contrecoup* tearing of the small blood vessels about the base of the brain?

Even when the material inside the hard exterior shell of the headguard is sufficiently thick to prevent direct contact with the skull, it is possible that the force waves in the shell are directed toward its periphery. In addition, the headguard may be shoved forcibly backward. Thus, the combination of these two forces centering at the junction of the skull and the neck may result in a hemorrhage at the base of the skull or a contusion to the brain stem.

Contusion could result in minute oozing of blood and gradual development of edema which finally reaches the point of compression of the brain stem. The vital centers, which control the heart, the respiratory mechanism, body temperature, etc., located in the brain stem, suddenly fail from this gradually developing compression and sudden death ensues.

From our studies thus far of these headguards, it is apparent that those which have a foundation made of canvas or leather, similar to a hatband and adjustable so as to fit the contours of the individual player's head, with a snugly fitting chin strap and occipital strap, and with a crisscross of canvas straps conforming to the front, top and back of the head, all attached to the fiber or plastic shell in such a manner as to prevent at all times contact of the latter with the canvas cap, scalp and skull, is a fundamental principle of protection.

The fact remains, however, that the force waves transmitted to the periphery of the shell are carried through the hatband and across the canvas straps forming the cap over the head and thus can give a terrific jar to the brain or a *contrecoup* injury to the base of the skull or neck.

It would seem that a better cushion type of padding of spongy rubber of a thickness of up to at least one inch attached to the inside of any foundation meeting this principle would further prevent direct contact with the skull and would disperse force waves to a marked degree.

Those helmets which have a canvas, leather or rubber padding, regardless of their thickness, attached directly to the fiber or plastic shell, furnish less protection to severe jarring, shaking up or *contrecoup* injury to the brain than do those with an air space between the foundation cap and the shell. A force sufficient to break the chin strap or a chin strap loosened by the player for comfort, may cause a hard shell to be forcibly shoved back against the vulnerable spot at the base of the skull and neck. It would seem, therefore, that a thick, soft spongy rubber along this posterior margin of the shell might disperse these direct force waves to the point of preventing many injuries to this portion of the anatomy.

Finally, since the exterior of the headguard must be so hard "as to prevent denting," it is evident that it at once becomes an offensive menace to the player struck forcibly by this hard material.

In our opinion, these shells must be covered by a thick spongy rubber or other material to prevent their becoming offensive weapons. It is possible that some material thick enough, but light enough not to be cumbersome, might be made into protectors of the bony parts.

A volunteer physician who is present only at regular games is better than no physician, but does not meet the situation. The college physician is usually thoroughly trained in making the necessary physical examinations but lacks experience in meeting trauma problems which develop in contact play.

The football surgeon must be adamant in his decisions. The protection of the life and limbs of the players must be his primary thought—the winning of the contest is a secondary matter.

Many high schools and colleges carry accident insurance for their players, such insurance covering medical care. In spite of this, many of the schools have volunteer physicians who give their services free because of their interest in the game. In our opinion, there are plenty of good insurance companies who would find it to their interest to pay part or all of a surgeon's expenses in order to have him present whenever practice or regular games are played. For further protection, this surgeon, not the coach, should have the final word as to a player's fitness to play.—*To be continued.*

—Reprinted from *Safety Education* for January, 1948.

MICE OR MEN, SHEEP OR GOATS, COLLEGES OR "CLUBS"?*

J. L. MORRILL

President, University of Minnesota, Minneapolis

These last few football seasons might be described as indicative of postwar normalcy, or of peacetime lunacy, whichever you prefer! One was the year of the nationally advertised "black market" in football players for hire, the year of release and reaction from wartime controls in public affairs, of typical postwar disillusionment and cynicism; of coaches and college heads catcalling like children over the kidnapping of veteran-transfers; of athletic conference cowardice in restoring normal eligibility requirements; of inflation-mad scrambles for stadium seats at any price. Louder than ever—and funnier, too, except for its crazed hysteria—the shrill yelp for coaching scalps, this time led by the students themselves at two major institutions; the more astonishing because students generally are saner about athletics than anyone else!

Players who threaten a "sit-down strike" for a better deal on athletic subsidies—and there was at least one rumored instance of that recently—will fall an easy prey to the easy-money approaches of unscrupulous gamblers. The possibility of a devastating betting scandal hovers like a black Harpy over the big-time intercollegiate athletic scene. College basketball has been brushed by its dirty black wing; professional football has smelled its foul breath.

* * * * *

Professional baseball found, from the days of Judge Landis, that eternal vigilance was the price of integrity. Professional football is learning the lesson. Intercollegiate football is ripe for the kill. If it comes, it will shake the big stadiums to their foundations; and the true friends of the colleges who are a mighty, although largely inarticulate, army will close in for a housecleaning. The faculties and presidents, too, will take a hand with a vengeance.

Moreover, the mounting plethora of post-season "bowl" games —orange, oil, cotton, cigar, tobacco, raisin, " 'gator", any and everything but collegiate—is of no help in all this. They put new compulsion on the coaches to win at any cost. They take the game from the campus.

* * * * *

No overnight reversal of present trends, contracts, or commitments can likely be expected, things being as they are. No sudden

*Abstracted from *Journal of Health and Physical Education*, Feb. 1948.

and sweeping reform could, in fact, be carried through. But we had better begin working our way back to the main road of an intercollegiate athletic program consistent with common sense and with college aims. As on any highway, there are rules of the road which should be respected. Perhaps they should be revised; but surely they should be enforced.

* * * * *

With the professional player, competition is a legitimate vocation; with the amateur, an avocation—as our NCAA constitution enjoins. Both types of sport, professional and amateur, attract large crowds, provide commendable recreation, collect large receipts and have their appropriate place in American life. But their aims and ethics are different. They are played, and judged, and enjoyed under different standards; and the difference is generally well understood. Most of the conferences codes make that difference abundantly clear, in theory at least. If it is becoming blurred in practice, then the need is to clear it up and bring the picture back into focus. Not only clarity but courage is required.

* * * * *

If there be those who prefer the side road, let them stay there. But let the colleges and universities be judged fairly by the standards to which they honestly desire to adhere. Let each present member-institution face frankly the clearly expressed obligations of our constitution, and decide whether it can sincerely comply.

Let those who cannot, either accomplish changes in the constitution or decently withdraw, and be barred thereby from participation in the various so-called championship games and meets conducted by the Association. Let this Association thereafter set up some means and machinery for the enforcement of its standards, possibly through inspection or accreditation like that required by the best professional associations in the academic world or the regional collegiate and secondary school associations.

* * * * *

There are those who think the battle for the amateur ideal has been lost, that the ideal is not practical, that it is silly to shadow-box with reality. Of course such a statement can be made about any ideal, that it has never been fully won and never can be. There are always good excuses for the faint-hearted and the insincere.

The athletic directors, graduate managers, and coaches will be the indispensable front line of any real reform, with the facul-

ties and the presidents in next rank support. Both will be backed up by a very large public and alumni constituency, little heard from until now but ready to battle for the right things if the issue can be clearly stated and understood.

That issue is the issue of the amateur code. How prophetic the Carnegie Foundation in its historic and largely unheeded Bulletin No. 23:

"The proposal that the amateur convention in college sport be abolished is a counsel of defeat", the Foundation declared. "The abolition of the amateur code . . . not only will destroy the best that is now gained from college sport, but will bring with it a new set of evils that would be infinitely worse than any that now obtain."

* * * * *

Another season should see the restoration of prewar eligibility and participation regulations. That will be a big help toward a return to common sense. The G. I. Bill-subsidized veteran is no real problem. As a group the veterans are serious minded, increasingly adult, less and less interested in athletics, now and later a credit to the campus. They deserve the concessions which most colleges have made in providing special counseling courses, and housing, for example, at heavy costs, which the federal government falls far short of reimbursing. The veteran deserves the breaks, but not in athletics. His subsidy is the equivalent of "money from home". It is *not* money from the college. Let him fight for the privilege of playing on the team as does any other student, upon the same terms and conditions, without any sentimental special favors.

Surely the newspapers, the sports writers, and radio reporters can be counted upon, to give strong support to a campaign for the best, and no less, in collegiate athletics. Their first assignment is to report the news; and such an effort would be news. If the press has been cynical, confused, or careless in the matter of the amateur concept, it has reflected the cynicism and carelessness of the colleges.

* * * * *

The president of the university can pull the whole faculty, which has more power and security than any coach or president, into the picture. "Institutional control" should be faculty control. Faculty athletic committees serve sometimes merely as complaisant stooges. Sometimes they are men not really representative of the true strength and character of the American college faculty. Too

often they are not really responsible to the faculty as a whole. It is peculiar that there is no real public distrust of higher education except in the conduct of athletics which are too often regarded as something apart from the main purposes of our institutions, "On the wrong side of the tracks". To get them back on the campus is the problem. Given that assignment, made a real partner in that program, the faculty can work wonders.

These remarks have not been made to justify intercollegiate athletics or defend their rightful place in our educational pattern, since the author is a firm believer in their value. Despite the lesson of wartime selective service rejections, we have yet to develop in this country an adequate appreciation of physical recreation to offset the nervous stresses of modern society in the improvement of public health.

Plato saw that centuries ago when he said that "games and physical training are not merely necessary to the health and development of the body, but to balance and correct intellectual pursuits." The mere athlete, he warned, is brutal or Philistine; the mere intellectual, unstable or spiritless; and the right education must tune the two strings of both body and mind to a perfect spiritual harmony.

* * * * *

But there is something beyond this that we prize: the shining lesson of sportsmanship, of "friendship through contest", of loyalty, shoulder-to-shoulder in the stands and on the team—loyalty to an institution and an ideal bigger and finer than ourselves, to the whole high purpose of your college or university and mine.

* * * * *

BCG in Prevention of Tuberculosis,—On the basis of over 5,000,000 inoculations of human beings with BCG vaccine, Levine thinks that it is entirely safe. Numerous favorable reports on the efficacy of BCG vaccine in the prevention of tuberculosis have been published, but with few exceptions these studies have been inadequately controlled. The consistency of favorable reports seems to indicate that the vaccine has a certain degree of efficacy. Continuance of BCG research is essential to determine the degree of its effectiveness. Further knowledge is needed concerning the duration of immunity, the necessity for reinoculations, the significance of the tuberculin reaction following BCG vaccination, the efficacy of the vaccine in different racial groups and the potency and efficacy of the vaccine when prepared with various culture mediums.—Jour. A. M. A., Nov. 29, 1947, as abstracted from the *Am. Jour. Public Health*, of Sept., 1947.

ATHLETIC STANDARDS NEEDED TO PROTECT HEALTH OF ADOLESCENTS.

FOSTER KEAGLE

Assistant Director of Illinois Health and Physical Education

Condensed from Educational Press Bulletin

Since adolescence is one of the most critical periods in a child's life his health should be guarded very carefully by the school. The normal older boy may engage in tremendous physical activity without harm, but the type and amount of activity of the adolescent child should definitely be limited.

With this in mind a number of school administrators and athletic directors of Illinois junior high schools, in conjunction with the state's health and physical education department, drew up a tentative set of standards for elementary school athletics. These in turn were sent to elementary administrators and coaches throughout the state. Twenty standards were agreed on as follows:

1. An annual health examination should be demanded of all athletes before participation in practice or competition; and a written statement of approval, signed by the examining physician should be on file in the principal's office.

2. No pupil may be a member of a school athletic team without the written consent of at least one parent.

3. The athletic team should be under the direct supervision of a qualified adult designated by the school administrator.

4. Every school should have a formulated policy regarding the financial responsibility for injury incurred in athletics, and this policy should be known to all participants and their parents.

The recommended standards were:

1. There should be a minimum of three weeks of practice before the first interscholastic game is played.

2. Not more than one game a week should be played. If after-school games are not possible, then early evening games starting no later than 7:30 o'clock and scheduled on nights not preceding school days may be played.

3. The season's schedule should not exceed 16 games, excluding tournaments.

4. No game should be played which requires staying away from home overnight or which requires more than a 75-mile round trip.

5. Playing quarters should be six minutes in length, and all time out periods two minutes.

6. A player who has been absent from school and under the care of a physician should bring a written statement from the physician approving his participation in athletics. A player absent from school because of illness but not under the care of a physician should secure a written statement from the school nurse or his parent

7. A boy who is not overweight should not be permitted to lose weight in order to make a lightweight team. No one should be permitted to play on both light and heavyweight teams.

8. An athlete with a head, neck or spine injury, or suspicion thereof, should be removed from a game or practice, placed at rest, and given a thorough examination by a physician as soon as possible.

9. A participant who is still flushed and perspiring after showering and dressing should be cautioned not to leave the building during cold or inclement weather until his hair is dry and he feels normal.

10. Adequate shower facilities should be provided and participants taught to use them after every practice or game.

11. Weight of players should be checked and recorded on a chart at each practice session. Any abnormal deviation in the weight of a player should be investigated.

12. Practice sessions should be limited to one and a half hours a day, four days a week.

13. Members of the athletic teams should be doing passing work in school.

14. A team may participate in one tournament in addition to the state contest.

15. All athletic contests should be officiated by at least one registered official.

16. There should be an exchange of eligibility lists between schools at least five days prior to a contest. —Reprinted from *School Management*, Nov. 1947.

* * * * *

Maine,—Recently, Desnieges E. Martin of the Maine Public Health Association, sent to the American School Health Association sixty-four renewals and subscriptions to the *Journal of School Health*. Thanks and congratulations are extended.

Also, attention is invited to the Report of the Committee on Tuberculosis in which is described the Maine efforts and procedures used in awarding the certificate of the association.

Almost always one good job is accompanied by another.—*C.H.K.*

REPORT OF THE COMMITTEE ON TUBERCULOSIS, AMERICAN SCHOOL HEALTH ASSOCIATION*

JAY A. MYERS, M.D., *Chairman*

Certification of schools with reference to tuberculosis control work in progress continues to offer the greatest promise of any project ever instituted by the committee. This activity was given a trial period in the State of Minnesota, where the first small group of schools was certified in 1945. The movement has rapidly gained momentum, and more than 500 schools now have certificates of the American School Health Association displayed on their walls and elsewhere. Among many other schools serious effort is being made to meet the necessary qualifications for certification. The members of the state subcommittee receive large numbers of inquiries from this and other states pertaining to the project. Local pride is at high tide. Members of personnel, children and students themselves, parent and teacher associations and other local organizations are constantly inquiring as to what they can do to hasten the development of their qualifications for certification.

Where schools have been certified, public ceremonies attended by large numbers of citizens have been held, thus further stimulating the interest in tuberculosis control. These have been widely publicized, thus extending their educational value. The members of the subcommittee in Minnesota have spent a combined total of 75 years in tuberculosis control work in this state, and they stoutly maintain that nothing has ever been instituted that has created as much interest which, in turn, has resulted in as much activity in tuberculosis control work as the certification of school.

The activity beginning in the schools promptly becomes community-wide. There is a search for tuberculosis among the old and the young,—in fact, everyone who might infect the school child. In rural communities the danger of tuberculous animals to school children is not overlooked. A year ago it was estimated that within five years every school in the state would be certified. Now it is believed that this will be accomplished sooner.

During the school year of 1946-47 the Maine Public Health Association and the Subcommittee on Tuberculosis of the American School Health Association of that state began a certification program in their schools. The Maine Public Health Association has published a folder entitled: "Tuberculosis from Five to Ninety-Five". On the cover is a photograph of a child of five years accompanied by her great-grandfather of 95. The contents are as follows.

*Presented before the Governing Council, Atlantic City, New Jersey, Oct. 5, 1947.

"Tuberculosis Control Certification Activity,—The Tuberculosis Control Certification Activity is an educational activity. It is one method of teaching parents, pupils, and teachers how to prevent the spread of tuberculosis. The object is not so much to find reactors as it is to find the source of the child's infection by X-raying the individuals with whom this child is in close contact, and who may be infecting him with tuberculosis germs.

It will be expected according to findings of medical authorities, that few reactors will be found in the school age group. It is important, however, to find this small number so that the source of their infection may be brought under medical supervision. It is recognized that some infections may be of the bovine type and transmitted from cows. In Maine, this is not considered a great problem.

In the last few years, the medical profession has placed emphasis on case-finding among adults rather than children because it is recognized that if the adult sources of infection are removed, children will not be infected. In childhood, however, we are faced with one important factor in Tuberculosis Control—that if contact with an infectious case continues, a child with a tuberculous infection is often later the adult with communicable tuberculosis. Therefore, any Tuberculosis Control Program that fails to find the infected child is an inadequate program.

It is recognized by the doctors that if a child is a reactor, someone with tuberculosis is now or has been in close contact with him. Teachers and health workers are urged to place the greatest emphasis not on X-raying of the child who reacts but on finding the person who is the source of his infection. This can be accomplished by encouraging an X-ray of all the child's close adult associates both in the home and the community. By following this plan, hidden cases of tuberculosis can be found and brought under medical supervision and infection in children can be prevented.

Nurses, under medical supervision, are permitted to apply a simple patch test which, when read, is recorded on the school health record as positive or negative. If positive, it indicates that at some time in the child's life, he has become infected with the germ of tuberculosis.

The schools offer our best opportunity to educate the public with reference to tuberculosis control in all its phases. This was recognized by Dr. Charles H. Keene, when, as president of the American School Health Association in 1934, he appointed a Committee on Tuberculosis.

In recognition of knowledge about tuberculosis acquired by

the pupils who have taken part in school patch test programs, the Maine Public Health Association is offering three grades of Tuberculosis Control Certificates to school rooms according to the per cent of children in the room who have participated in the tuberculin testing program during the school year under the following classifications:

Class "A"—A room is eligible for a Class A Tuberculosis Control Certificate (good for the school year) when 90-100% of all non-reactors have had the test.

Class "B"—A room is eligible for a Class B Tuberculosis Control Certificate (good for the school year) when 80-89% of all non-reactors have had the test.

Class "C"—A room is eligible for a Class C Tuberculosis Control Certificate (good for the school year) when 70-79% of all non-reactors have had the test.

Gold Seal—A gold seal will be affixed to Grade "A", "B", and "C", Certificate when all members of the school personnel[1] and others with whom the reactor is in close contact have had an X-ray checkup for the year in which the Certificate is awarded.

The School Health Cards will show which pupils have had the test. This information may also be obtained from the school physician or the public health nurse, parents or family physician."

Subcommittees in other states are devising plans for the institution of certification of schools. As yet there is no uniform group of qualifications for the schools of the entire nation. *The tuberculosis situation differs so much from place to place that the committee has thought best for the time being to have each subcommittee set up the qualifications for certification which are most applicable to its own state.* Therefore the qualifications used in Maine or Minnesota do not need to be adopted by any other state unless the local subcommittee considers them applicable. An entirely different set of qualifications may be established by any subcommittee and employed in its state. The American School Health Association is prepared to send blank certificate forms to subcommittee members for use in any state.

In June, 1946, the Chairman of the Committee on Tuberculosis of the American School Health Association met in Atlantic City, New Jersey, with Dr. R. A. Higgons, Chairman of the Committee on Tuberculosis of the American Academy of Pediatrics. The purpose of this meeting was to effect the revival of a close cooperative effort between these two committees to control tuberculosis in the

(1) This applies to the teacher, bus driver, cook, janitor, and all others who may come in contact with the pupils in the school.

schools of this country. It was decided that wherever a state or city subcommittee on tuberculosis of the American School Health Association is engaged in or decides to undertake a certification program in the schools, Dr. Higgons will appoint a state or city subcommittee on tuberculosis of the American Academy of Pediatrics to participate in the project. Thus the two subcommittees would work together, and any certificates issued after such an arrangement is effected should bear the name of both organizations. This should add a great deal of prestige to the activity and result in a much more effective program.

From time to time members of the committee are asked about the advisability of administering some substance such as BCG, Vole Bacillus Vaccine or dead tubercle bacilli to school children with the hope of immunizing them against tuberculosis. On September 7, 1946, the Division of Tuberculosis Control of the United States Public Health Service called a conference on BCG. A review of the world's literature on this subject revealed that to date no study has been reported which has been adequately or conducted over a sufficiently long period of time to justify final conclusions concerning the efficacy of this substance. Therefore, it was recommended that an adequate study be undertaken by the Tuberculosis Control Division of the United States Public Health Service.[2]

This study has already been initiated. It is to include a very definitely limited number of persons, and the study will be carefully and scientifically controlled and conducted over a sufficiently long time to determine whether BCG is efficacious and if so to what extent and under what conditions, and also to make certain that it does not possess any potentiality of remote harm to individuals who receive it.

Inasmuch as BCG, Vole Bacillus Vaccine and all other substances believed to be capable of producing some immunity are still in the experimental stage, they are not recommended at this time, the only exception being in the few localities chosen by the Tuberculosis Control Division of the United States Public Health Service as a part of the population to be included in its study. This will be an extremely limited number of places and individuals. For the remainder of the country it is thought best to refrain from the use of all such substances, until facts have been determined concerning them. In the meantime, the well established, fundamental methods of tuberculosis control which have proved so effective in the schools should be extended and intensified.

(2) See abstract on page 130.

F. F. F. F.—2000 A.D.

JAMES FREDERICK ROGERS, M.D.

During World War I there was much lamentation over the "defects of the draft," and the word "shocking" was in frequent use with reference to the condition of a large proportion of men of military age. When, more recently, it became necessary again for society to interpose a shield of human lives between itself and disaster, its cerebral cells once more became agitated over the report that its young people were not all fit carry a rifle. The emotional disturbances caused by the "revelations" of the draft seem to be superficial and transient and the condition of youth between wars of little disquieting moment to the elders of the tribe. But to their possessors, physical and mental shortcomings, on any day, in any year, are a hindrance at any age to the full enjoyment of life, liberty, and the pursuit of happiness. Will a national appraisal a quarter of a century hence again be disheartening, and what of the year 2000? Granted that we should really become concerned over the matter, what can be done about it. Are we growing worse, or can we improve?

The examination of men for military purposes began with the Napoleonic wars, but the results of such appraisals at different periods are not readily comparable. The standards set up have been different, and these have even undergone decided modification within the period of one war. The methods of examination have changed from time to time according to advances in medical knowledge. However, some comparisons of what information we have are of interest.

Among the conditions which rendered the young man unfit for Napoleon's army were: "1. Total loss of sight. 2. Loss of nose. 3. Dumbness; permanent loss of voice and complete deafness. 4. Voluminous and incurable goiter, habitually interfering with breathing. 5. Scrofulous ulcers. 6. Confirmed tuberculosis of the lungs in the 2d and 3d degrees (for hemorrhage there should be only provisional exemption). 7. Total loss of motion of arm, leg, foot, or hand. 8. Curvatures of the long bones from rickets or nodosities sufficient to impede, evidently, the motions of the limbs."[6]

In the present century no examiner would, of course, pass a candidate with any of the above conditions, but we may infer that

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in 1800 any man who was less defective would probably be used for some purpose. Moreover, we can more than guess that these very serious conditions were quite common—otherwise they would not have been thus listed. Blindness must have been much more frequent in a time when the eyes of the newborn received no protection from gonorrheal infection. Moreover, other infectious diseases affecting the eyes, including smallpox, were rampant. There must have been many noseless among the young men of the Napoleonic draft, although they are very rare today. In World War I only about 2 men in 100,000 were found with disease of the septum of the nose, the extent of which is not indicated.[2] Syphilis, which would be responsible for noselessness, was evidently either much more common or far more vicious then than at the present time. Then, of course, comparatively few received adequate treatment. In the present century no draft boards would have thought of accepting a man with active tuberculosis, but even the spitting of blood would not have caused rejection under the French code. Goiters we still have with us, but one so large as to interfere with respiration is rare. Scrofula, or "hog's neck," is, fortunately, far less common than it was, even within the memory of some of us, as are also serious deformities due to rickets. So frequent were crooked legs at the beginning of the nineteenth century that, in military drill, the soldier was not required to bring his heels together for the reason that a very considerable number of men could not accomplish this feat.[3]

We do not know what proportion of men were rejected by the Napoleonic physicians, but the examiners were evidently not very exacting. A half-century later, or a hundred years ago, about 50 per cent of Frenchmen who were 20 years of age (30 to 60 per cent according to departments) were considered too "infirm or deformed" for military purposes.[1] An English writer of the day remarked, "We should blush for the state of our agriculture if we could only rear for its operations so small a proportion of oxen and horses able to work, compared with so large a number of weak and misshapen animals."[1]

Frequent among organic conditions reported from drafts of the present century are defects of the eyes, of the ears, and of the heart. We have no means of comparing men of this century with those of previous centuries with reference to vision or hearing except by weighing the causes of these conditions. A large percentage of damaged organs can be laid to communicable diseases, and these have been greatly reduced in frequency and severity.

One of the worst offenders, smallpox, has nearly disappeared, though not of its own accord. Other cases of defect have been due, in part at least, to poor nutrition in early life. Some physical faults and weaknesses are the result of heredity. That poor vision may be induced by excessive use, or by poor conditions of work, is illustrated in the discovery, by the medical examiners of children in English schools a half-century ago, that twice as many girls as boys had seriously defective sight. The cause was found in the fine needlework required of the former in rooms not too well lighted and in the early grades. This requirement was removed from the curriculum, and the vision of the girls who then entered school was later found to be quite as good as that of the boys.[4] The materials on which the eyes of children are exercised and the lighting of schools have been greatly improved everywhere. Defects of the heart are usually the result of rheumatic fever, but this disease has been on the decline for some years and it must be far less frequent than under conditions of earlier times. Many abnormal conditions of the nose and throat have their beginnings in "colds" and their kin, and these are still with us. Infantile paralysis is unchecked and possibly it still cripples as many as formerly, but the deformities of limbs due to malnutrition are certainly far less frequent than a century ago.

We know that we have, for a century, been growing taller and heavier, and, generally, the taller and heavier boy or girl is found to be less defective.

That young people, long before military age, are defective has been "revealed," year after year, by the medical or "health" examination of school children which has been carried on, to some extent, for the past half-century. The records of these examinations have been open to the public so that no surprise or shock should have come when the same children were scrutinized at maturity. It has been the object of the school health service to find improvable conditions in children and to try to have something done about them by their parents. While it has fallen short of its possibilities, this service has brought about some improvement in the national physique, whether for peace or for war. On the whole, that physique must be better than a century or a half-century ago, though it is anything but satisfactory.

What are the sources of human defectiveness and what can be done about them? Some of the causes have already been mentioned. *Heredity* is responsible for the presence of many deviations from what we consider "normal." In the hazardous process

of development, from conception to birth, mishaps may occur, with resulting cleft palate, clubbed feet, the absence of a limb, or other anomaly, external or internal. Fortunately such *"congenital" accidents* are not of common occurrence. *Malnutrition of the mother* is no doubt at the bottom of much defectiveness. Animals in captivity often bring forth young which are not able to survive or are definitely malformed. *Poor nutrition of the child* leads to imperfections of sense organs and of limbs which may not be compensated for by better feeding later. In a clinic for young children in England a record was kept of their condition with reference to whether they received what the physicians considered a "satisfactory" or an "unsatisfactory" diet. The results were illuminating. In the latter group more than twice as many had decayed teeth, diseased throats, or squinting eyes; and nearly as high a proportion exhibited running ears, anemia, and abnormal bones.[5] The bad teeth of these children belonged to the "temporary" set, but it is not unlikely that those so hopefully called "permanent" turned out to be relatively as poor. Deformities of bone caused by rickets usually disappear in large degree in later life, but it has been shown that some effects of this disease persist. In 1946 the 5-year-old Glasgow children whose mothers had been furnished food priority during the war were found to have far better teeth than 5-year-olds of the same social status in pre-war years.

While our ignorance of the subject of nutrition is still called "abysmal" by those who ought to know, we have learned much. Probably when we have more light on the subject the cause of our most common disease, carious teeth, will be plain. At any rate, there is some evidence to this effect.

Granted that in the lottery of sexual selection the human organism has been given, by inheritance, a substantial boost toward a vigorous and well-ordered unfolding; that he survives without mishap the perilous process of prenatal development; granted, also, that he is safely expelled from his even-temperatured aquatic habitat and becomes an air-breather, constantly adjusting to the continual changes of his new atmosphere; granted that he has been so fortunate as to be supplied with suitable materials for growth and development, what then? He is at once exposed to the inroads of various parasites, visible and invisible. Indeed, before he is yet born he may have harbored, with disastrous results, the organism of syphilis. By heredity he will have some powers of resistance, some degree of immunity, but, depending on his care and feeding and his protection by vaccination or by isolation, he

will fall more or less a prey to *infections*. The influence of these personal combats with bacteria and their like will exhibit itself in a variety of consequent disabilities. From syphilitic infection he may acquire damage of any organ; from measles and mumps, from scarlet fever or whooping-cough or rheumatic fever he may emerge with damaged vision or hearing, respiration, or circulation; from meningitis or poliomyelitis he may be always a cripple; he may become the possessor of an ever-bothersome sinus or throat as a souvenir of common colds; while by the tubercle bacillus he may be damaged in lung or bone or joint throughout all his days. In all such encounters he will come off the better by the best of hygiene and of medical care.

So much for the known causes of physical weakness and imperfection. Are we making the most of such knowledge as we have? Can there be more scientific breeding of the human animal? Through the transmission of the known facts to all and by the application of contraceptive practices, there should be at least some reduction in the transmission of family failings. When it comes to congenital mishaps, no remedy is in sight. However, a better start in life can be given by better nutrition before birth and by not too frequent bearing of children. The improvement in the welfare of infants and young children will be made possible by better economic conditions and by the extension to all mothers, and would-be mothers, of instruction and unstinted medical care. Such services are, as yet, anything but adequate.

We have noted that, at other times, and for purposes other than war, there have been those who have investigated our collective condition in the draft of public school attendants, and they have tried to get something done about the manifold diseases and imperfections all too evident from kindergarten through high school. By the prompt isolation of contagious disease and by improving the conditions under which school children live and work for a considerable portion of their days, by promoting better nutrition through the education of children and parents and by the school lunch, the school health service helps to improve the general well-being of its subjects. But its work must be largely makeshift and reparative, rather than preventive and constructive, for children have come a long and hazardous way before they arrive at school. As yet, the health-appraising service is often absent or limps badly from lack of public interest and support, while the medical and dental treatment on which it must rely for results is too often woefully wanting. At present, parents are penalized for

the possession of children with shortcomings, the causes of which lie in communal ignorance or indifference. The school health service is advancing from its early detective and appraising functions to an examining and advisory service. When, in addition, adequate treatment is made freely available to all, we shall begin to make real progress.

Among the regrettable causes of rejection for both military and everyday life are the nervous and mental deviations from what we consider health. Save as they are dependent on the integrity and functioning of the brain, these unfortunate states of mind have very little relation to the physical conditions we have been considering. One may possess all sorts of defects of vision, of hearing, of teeth and tonsils, of lung or limb, and yet be perfectly sane. Are we sounder in mind than our forefathers? We hope so. At any rate, we are, on the whole, better in body; and, if we put in practice what we already know on the subject, the men and women of the year 2000 will be of better physique than are those of the present time. We might shake ourselves out of our state of "shock" and proceed to do what we can with our present knowledge toward human betterment, physical and mental. There will be plenty of 4F's in the year 2000, but they need not be, relatively, so numerous as in 1946.

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MEETING

The American School Health Association and the American Public Health Association at Boston, Mass., November 8-12, 1948.

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EDITORIALS

Superintendents are Professionals, — Henry W. Holmes,—

(In view of the increasing shortage of professionally prepared school administrators, the accompanying guest editorial is highly pertinent. Back in 1891, Paul Henry Hanus saw that the management of schools must be studied intensively and persons trained to enter upon it as a profession. The writer of this editorial, during his deanship of the Graduate School of Education of Harvard University, 1920-1940, carried on with distinction in the Hanus tradition.)

The American Association of School Administrators will approve, as a matter of course, any movement which bids fair to make the general management of public school systems more efficient. But the Association should oppose any trend toward the selection of superintendents who have no training or experience in education, on the ground that a superintendent need not be an "educator" but must be an "administrator." That argument is unsound.

There is no such thing as "administration" in the abstract: there may be "principles" of administration, and there may be "administrative ability"; but success in the actual management of any enterprise depends on understanding of the character, problems, history, and objective *of that enterprise.* Running a school system is different from running a factory, a hospital, a store, or a city. The only safe rule is to pick the head of a school system from professional ranks.

The office of superintendent has a long history in this country —going back even to the Massachusetts "Old Deluder" Law of 1647. (Cf. Suzzallo's *Rise of Local School Supervision in Massachusetts.* Contributions to Education, No. 3. New York: Teachers College, Columbia University, 1906.) The appointment of nonprofessionals would be a reversal of an interesting and significant social development.

More important, it would emphasize the machinery of school administration rather than the social ends of education. The unfortunate repercussions of that shift of emphasis would be felt all along the line, from nursery schools to university research centers. Eventually the people would realize that professional leadership had been sacrificed for something far less valuable.

Whitehead defines a profession (*Adventures of Ideas.* New York: Macmillan Co., 1933. p. 74) as an occupation in which practice is based upon an extensive body of theory, continually renewed by discussion in the light of experience. Beware of a superintendent who is not a professional because he has had no part in the renewal of the theory of his job!—Reprinted from the *School Administrator,* March 15, 1948.

* * * * *

The leading three articles in this issue of the Journal have to do with the physical, ethical and social phases of athletics.

While most of our members and subscribers deal mostly with other phases of school health, all of us should realize the serious menaces that appear in sports and athletics if they are not watched constantly to protect competitors and to protect the spots themselves

No normal adult lacks interest in the welfare of children and youth. Athletics are a phase of normal health growth and development and each of us should help to make them as safe, as ethical, and as educational as possible.—*C.H.K.*

NOTICE,—Committee Reports,—It has been the custom in many cases for Committees of the Association to present their reports to the Governing Council at the time of the annual meeting of the Association. This is not a desirable procedure since no time is given the Council for consideration of the report, either as to format or content. As these reports often involve some policy of the Association, not less than thirty days should be given the Council, or at least the Executive Committee of the Council, for consideration before the report is adopted by the Council. Failing such advance presentation, it would seem that the only sensible action of the Council would be to "receive the report and place it on file, or for further study by the Governing Council".

For the present, the Executive Committee feels strongly that at least a preliminary report should be in their hands thirty days before the first day of the annual meeting of the Governing Council.

The Association should not be made responsible for the content of a report unless the Council, or at least its Executive Committee has had a chance to study it. Only after such study should a report be adopted".—*C.H.K.*

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ABSTRACTS AND NOTES

Physical Education, Health Education and Recreation,—Miss Moulton calls attention to the fact that "the term, physical education, seems to have a wide diversity of meanings in the educational world even in our own physical educational world". Until we are agreed what we mean by physical education, health education and recreation we can't very well determine relationships. Physical training in the early part of the century meant a program designed for "huskies" and the less vigorous were excused from such programs. Sports were not included in this field. Outcomes looked for were health, strength, coordination, self control, discipline and prompt obedience to commands. The work was formal and given by skilled vigorous teachers. There was no place in these programs for dilettantes. However, "Gym" teachers were expected to live exemplary lives.

Today sports make up a large part of the physical education program. "Recreation and fun, rather than discipline, are accepted objectives". The "witch hunting" prevalent in the old days with reference to teachers is no longer practiced. Physical Education is the term used rather than Physical Training. In this program it is aimed to give understanding to the reasons for the program.

Miss Moulton relates how confusing it has been since "health education" and "recreation" have been added by the National Organization to the name of the association—Emphasis on the different fields has varied from time to time.

Participation in motor-activities wherein new thought processes are set in motion and endurance and control are increased is given by Miss Moulton as her idea of what physical education should be.

Attention is called to the lack of understanding of the meaning of health. So many have thought only in terms of physical health. Miss Moulton recognizes that total health includes physical, mental, emotional, spiritual and social health. She then defines what she means by these various aspects of health. These definitions are quite in accord with the best thinking on this subject.

Miss Moulton says "Health Education includes all those 'leading out' processes which give experience plus an awareness of the relations of that experience to the patterns of life as a whole".

Finally attention is called to the fact that "all health experiences are not health education". Only when they are accompanied by an awareness of cause and effect and purpose, by a reasoning process, by an integration do they become health education.

One wonders, if including total health in the N.E.A. program of Health and Physical Education, isn't going to call for more professional workers whose essential interest isn't the activity program, but rather the promotion of all the aspects of health which Miss Moulton has defined.—Abstract from "The Relationship of Physical Education, Health Education and Recreation, by Gertrude E. Moulton, Rio Grande College, *Journal of Health, Physical Education and Recreation*, October, 1947. Abstracted by John E. Burke, M.D.

* * * * *

Tuberculosis Declines,—In 1907 when the TB-Fighters of the SCAA and the State Health Department joined forces, the death rate from all forms of tuberculosis was 152.8 per 100,000 population—leading all other causes in the State (outside of New York City).

Did those early pioneers ever daringly dream that the rate would decline below 30 within 40 years. It has happened here in 1947! According to provisional data reported by the State Health Department for 1947 there were 1,861 resident deaths from all forms of tuberculosis, or a rate of 29.2 for the State, exclusive of New York City. This is the lowest tuberculosis death rate yet reported in this area. The final corrected figure for 1946 was 30.1.

The 1947 tuberculosis mortality rate of 37.5 for the State as a whole was also the lowest on record. In New York City during 1947 there were 3,471 tuberculosis deaths, or a rate of 44.3. The 1946 rate was 47.0.—*SCAA News*, March, 1948.

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Reliability of X-Ray Examination of Chest,—To the Editor: For many years I have had the idea that X-ray examination of the chest is reliable in pulmonary tuberculosis, perhaps about as much so as the Kahn test in syphilis. From what I have read recently it appears that this is not the case. This is disconcerting to me, and there must be many others who feel the same way. I suggest that you publish an item in the Journal setting forth the present status of this matter.—*H. V. Hendricks, M.D., Kalkaska, Mich.*

ANSWER.—It is true that recent reports on comparative readings of survey X-ray films have shown a fairly high percentage of disagreement as to certain types of lesions and as to the status of activity of these lesions. This situation is not new, but it has been emphasized by the fact that thousands of survey films are being taken and read by radiologists and internists throughout the country. The miniature films, of course, present much more difficulty and are supposed to be used only for screening. The large films (14 by 17) are then used for diagnostic work. It has been an established fact for many years in tuberculosis that it is not always possible to make a diagnosis of activity or of a healed lesion in certain types of cases on a single film. Stereofilms over a period of time are usually necessary for these borderline cases. X-rays of the chest in tuberculosis are still most valuable aids in diagnosis and in a very high percentage of cases are extremely reliable. It is only when the interpreter attempts to go too far in deciding the status of the pathologic process as active or inactive that it becomes necessary to have serial films in these borderline conditions to determine more closely by subsequent changes the status of the disease. Even then the X-ray diagnosis should always be supported by adequate history, physical and bacteriological studies.—Journal of A.M.A., Dec. 6, 1947, p. 956.)

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Five Leading Causes of Death,—The federal security administrator has just announced that a new record low crude death rate was made in the United States in 1946, when the death rate was 10 per thousand population as compared with the previous lowest rate of 10.4 in 1942. These figures are for the continental United States and exclude stillbirths and deaths among armed forces overseas. The five leading causes of death were diseases of the heart, which caused 429,230 deaths, cancer and other malignant

tumors (182,005), intracranial lesions of vascular origin (125,646), nephritis (81,701), and accidents, excluding motor vehicles (64,622). Deaths from diseases of the heart increased for the third consecutive year and accounted for 30.8 per cent of the total number of deaths. Cancer and other malignant tumors continued to increase in importance as a cause of death, producing 13 per cent of the total number of deaths in 1946. The number of deaths from the other major chronic diseases, including intracranial lesions of vascular origin, nephritis, diabetes mellitus, pneumonia, influenza, and tuberculosis, decreased from the previous year. The number of deaths from diabetes mellitus was 34,731 as compared with 35,160 in 1945. Tuberculosis caused 50,911 deaths in 1946 as compared with 52,916 in 1945. Maternal mortality declined to a new low in 1946 despite an increase of about 20 per cent in the number of births. Maternal deaths decreased from 5,688 in 1945 to 5,153 in 1946. Deaths from accidents totaled 98,033, of which 33,411 were the result of motor vehicle accidents. —(Jour. A. M. A., Jan. 24, '48, p. 274.)

Is There a Shortage of Physicians?,—The pronouncement by Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service,[1] that the country is faced with a shortage of 30,000 to 50,000 physicians by 1960 has recently been re-emphasized by the federal security administrator, Mr. Oscar Ewing. Many government officials, as well as the public, have been led to believe that urgent measures are required to prevent a grave shortage of medical care. Alarm is unwarranted and unjustified. Actually the number of physicians is increasing at a relatively more rapid rate than is the general population. Ten years ago the statistics indicated one active physician for every 800 persons in this country; at present there is one physician for every 760 persons; by 1960 there will be one physician for every 700 persons or fewer. More physicians are currently being trained in this country than at any time in our history. All indications point to a still further increase in the number of physicians graduated each year. —From Editorial, Jour. A. M. A., Feb. 28, 1948, p. 626. 1. Parran, T.: J. A. M. A., 1047-1049 (April 12) 1947.

Health of London Children Improved,—Sir Allen Daley, medical officer and school medical officer of the London County Council, stated in his report for 1946, which has recently been published, that in spite of difficulties and shortages due to the war the school children of London had not suffered in health. Indeed, there was a higher percentage whose health was recorded as excellent—17.96 per cent in 1946 compared with 16.24 per cent in the prewar year of 1938—and a lower proportion of children was

assessed by the school doctors to be in a state of subnormal nutrition—5.58 per cent subnormal and 0.04 per cent bad in 1946 compared to 6.50 and 0.06 per cent in 1938. Also there was a lower incidence in children of pathological conditions of the ear, nose and throat and a smaller incidence of dental defects. In each age group there was in 1946 a higher proportion of children with normal eyesight. The reason for this improvement, which began with the war and has persisted, is not known. The incidence of cardiac defects in 1946 was half that recorded in 1938, and there appeared to be a decrease in the incidence of juvenile rheumatism. This report bears out the statement in a previous letter that the sensational attempts to suggest that the British people are being starved are unfounded. It is of interest that this improvement in the health of children runs parallel with a general improvement in vital statistics.—From London Letters, Journ. A.M.A., Feb. 21, 1948, p. 571.

Baldness,—To the Editor: Is there any reason found as to why baldness is usually associated with men?—L. Edward Giovine, M.D., Woodside, New York.

ANSWER.—Baldness in the male has been attributed to multiple factors, varying from tight fitting hats and frequent washing of the hair to seborrhea, or endocrine disturbances of the pituitary body or testicle, or deficiency of estrogens and multiple combinations of the foregoing. J. B. Hamilton, in research on eunuchs and eunochoid persons (Am. J. Anat. 71-451 (Nov.), 1942, showed that there is a definite relationship between the testes and baldness. Herbert Rattner, in a paper on ordinary baldness (Arch. Dermat. & Syph. 44:201, Aug. 1941) agreed with Danforth that evidence of an endocrine influence on the hair, although such evidence is abundant, may be difficult to interpret, and that before endocrine therapy is advised for simple baldness, other adequate evidences of endocrine dysfunction should be present. Extensive references were given by Rattner to various theories as to why baldness occurs in men. More recent references are to be found in the book by Savill on the Hair and Scalp (ed. 3, Baltimore, Williams and Wilkins Company, 1945). E. A. Cockayne (Inherited Abnormalities of the Skin and its Appendages, London, Oxford University Press, 1938) referred to the older concept that premature baldness is inherited as a sex linked recessive character or by a gene in the Y chromosome, but he cautioned against full acceptance of this view. Rattner in his paper concluded that "the man who would avoid baldness had better use greater care in the choice of his ancestors". —Journ. A.M.A., Nov. 29, 1947, p. 880.

Schoolroom Lighting Guide,—More light in the school classroom doesn't necessarily mean better sight for school children according to "Lighting Schoolrooms," a 17-page pamphlet released by the Federal Security Agency's Office of Education. Although more light is required in many classrooms, the provision of good seeing conditions is as much a matter of reducing glare and of eliminating sharp contrasts as it is of increasing the intensity of lighting, the pamphlet reports.

Brightness differences can be reduced by shielding the lamps, seating pupils so that they will not face windows, repainting walls and ceiling with pastel tints, and using lighter colored furniture and chalk boards, according to Dr. Ray L. Hamon, Chief of School Housing for the Office of Education, who prepared the pamphlet.

Intended as a nontechnical guide for architects, school planners, and educational administrators, "Lighting Schoolrooms" furnishes recommendations suitable for remodeling as well as for new school construction. In addition to the problem of "brightness balance" the pamphlet briefly considers the type and location of windows and methods of artificial illumination.

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Health Instruction Comes First,—Since health is the nation's most valuable asset, it deserves the number one position in the school's curriculum, is the belief of Dr. Edward L. Bortz, president of the American Medical Association, according to the *American Medical Association News.*

Dr. Bortz maintains that stimulation is necessary in certain sections of the country to modernize the health and physical education program in all grades of the school, if the youth of the land is to make a better showing physically. Toward that end, basic facts concerning the rules of health should be included throughout the entire school curriculum.

A school health program such as the A.M.A. visualizes can best be worked out at the community level. Its success is dependent upon the policies emanating from state and national educational centers which can direct the subjects to be included in the curriculum.

The close cooperation between school physicians and teachers can mean emphasis on positive health by teaching children the elements of preventive medicine. Parents can be kept informed and advised through parent-teacher associations, civic clubs, church groups and other auxiliaries and societies, states Dr. Bortz.

—School Management, 1948.